

October 29, 1959

Dr. Howard Pattee
c/o Professor Arne Engström
Department of Medical Physics
Karolinska Institute
Stockholm 60, Sweden

Dear Howard:

Since our last conversations we have been moving ahead with plans for the space missions to detect life on Mars and Venus. We are now thinking of going ahead with the experiments that could be used in a soft planetary landing. It is hard to predict when this might be accomplished but 1965 may be a reasonable estimate. Since few of us are likely to spend our full time in this kind of experimental work we probably should be getting under way without further delay if we mean to have the experiment ready in time for a possible flight.

After considerable reflection we have concluded that the most fruitful experiment, after all, should utilize a microscope as the local sensor. We are reassured that there will be a useful communication band width for the transmission of microscope images by either a vidicon or flying spot procedure. My thought has been that we might feed flexible, transparent tapes to the focal plane of a fixed focus microscope, these tapes collecting samples of atmospheric dust or soil. This system would also allow for some simple cytochemical procedures which could detect crucial materials such as DNA. I would be very pleased to excite your active interest in joining this program and hope you can give some thought to it even before your return here next spring. At that time I thought we might get together to prepare a proposal for financial support on the necessary scale. There is no doubt at all of the interest in NASA to do this. It might be helpful if, even before your return, you could give some thought to the kind of budget that might be entailed though I think we can delay the submission of a formal proposal until we have had a chance to discuss it more thoroughly after your return.

Meanwhile, I thought it would be profitable if we could purchase the television microscopes which are now commercially available to obtain some preliminary familiarization with the possibilities and limitations of these instruments. NASA is not yet organized for its biological program but Bob Morison of the Rockefeller Foundation was encouraging me to go to go to them if we needed a "small" amount of money for getting started in a hurry. As far as I have been able to find out, there is no such equipment on the campus at the present time but I thought I should write to you to ask if you knew differently. I would also be grateful to you for advice

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on the types of instruments which are commercially available at the present time. I understand that RCA puts out one such instrument; I believe there are others but I have no insight into whether they differ sufficiently to make it worth-while to have them on hand as well. I will be waiting to hear from you before we take any other steps.

I hope that remembrances from home like this are not seriously impairing the pleasure and usefulness of your visit in Sweden.

Yours as ever,

Joshua Lederberg
Professor of Genetics